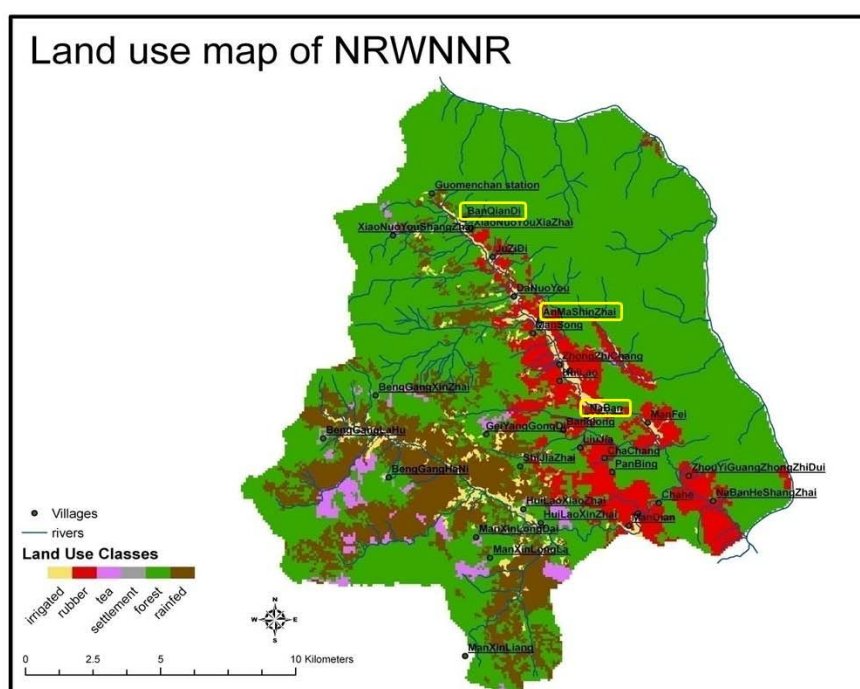


## Agro-ecological diversification- SP5 together with NRWNR realizes the establishment of demonstration plots with an alternative rubber intercropping concept

In September the implementation of three intercropping demonstration plots of 10-15 mu each could be realized in the Naban River Watershed National Nature Reserve. The localities have been chosen in a way that they represent the current elevational gradient of rubber growing in NRWNR. They are located at Naban Village, near the Naban Research Station (ca. 700m a.s.l.), near AnMaXinZai, along the main road (ca. 800m a.s.l.), and around BanQianDi village (ca. 900m a.s.l.) (Pic. 1). Thus, all sites are easily accessible and thus very well suited for demonstration purposes.



Pic. 1 - The location of the three agro-ecological diversification plots within the NRWNR.

The objectives of the demonstration plots are to show options to combine rubber production with additional benefits and to show long-term income options beyond rubber, respectively. Additionally, the diversification should have positive impacts on Ecosystem Services beyond livelihood aspects and improve ecological value without compromising income. Finally, it is intended to encourage discussions on alternative rubber management options between and within different stakeholder groups, especially concerning the topic of ecologic but also economic sustainability.

To that purpose a set of selection criteria has been developed based on the analysis of intercropping evolution and current practices. Based on these criteria three tree species have been identified for the integration into existing rubber plantations. All three species have in common that they are native, rare and protected Chinese plants. One, *Nyssa yunnanensis* / 云南蓝果树 (Pic. 2), has been selected only for protective reasons, while the other two species, *Parashorea chinensis* / 望天树 (Pic. 3), and *Taxus yunnanensis* / 云南红豆杉 (Pic. 4) also provide valuable timber and medicinal products, respectively.

As next step a baseline inventory will be conducted assessing the survival rate and growth performance after the first dry season in spring next year.



Pic. 2 - *Nyssa yunnanensis*, an extremely rare (IUCN: critically endangered) and protected plant – it is only known from a small spot near Puwen, Jinghong County.

Pic. 3 - *Parashorea chinensis*, one of the very few representatives of the Dipterocarpaceae tree family in China. The Dipterocarpaceae are prominent representatives of the tropical rain forest and find their northernmost extension in Yunnan Province. Due to overexploitation the species became very rare (IUCN: endangered), and only a handful of mature trees still exist in China, e.g. near Mengla.

Pic. 4 - *Taxus yunnanensis*, a tree species providing valuable timber but also a source of an anti-cancer drug. Due to these properties it has been heavily exploited and is nowadays classified as endangered (IUCN).

## Demo- sites – first assessment of planting success

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In February 2015, SP5 conducted the first evaluation of the demo-site plantings conducted 6 months ago during the previous rainy season. The first year after planting is usually very critical since the trees have to adapt to the new site and are therefore very sensitive. The evaluation took place in the second half of the dry season and gives a first impression on the preliminary success of the planting. The following three tables present baseline data for the planted trees at Naban, AmaXinZhai and BanQianDi. Data for the covering rubber trees will be presented later.

**Table 1:** Naban (consisting of 3 sub-sites)

	<b>No. of trees</b>	<b>Survival rates %</b>	<b>Average height m</b>	<b>Range of height m</b>
<b>Dipterocarpus sp.</b>	5	80.0	0.50	0.35-0.77
<b>N. yunnanensis</b>	12	100.0	1.23	0.7-1.66
<b>P. sinensis</b>	75	94.7	0.68	0.30-1.09
<b>T. yunnanensis</b>	235	97.9	0.63	0.20-1.27

**Table 2:** AmanXinZhai

	<b>No. of trees</b>	<b>Survival rates %</b>	<b>Average height m</b>	<b>Range of height m</b>
<b>N. yunnanensis</b>	19	94.7	0.99	0.40-1.30
<b>P. sinensis</b>	2	100.0	0.48	0.45-0.50
<b>T. yunnanensis</b>	216	99.1	0.48	0.13-0.80

**Table 3:** BanQianDi (consisting of 3 sub-sites)

	<b>No. of trees</b>	<b>Survival rates %</b>	<b>Average height m</b>	<b>Range of height m</b>
<b>N. yunnanensis</b>	20	95.0	1.12	0.59-1.42
<b>P. sinensis</b>	4	100.0	0.45	0.34-0.51
<b>T. yunnanensis</b>	39	97.4	0.47	0.16-1.05

With survival rates of beyond 90% (Tables 1-3, Fig. 1) the situation is very positive (the 80% of the *Dipterocarp sp.* is based on only 5 individuals), but it needs to be seen how the performance further develops. Therefore, the next assessment is planned end of the coming season, which is one year after planting.

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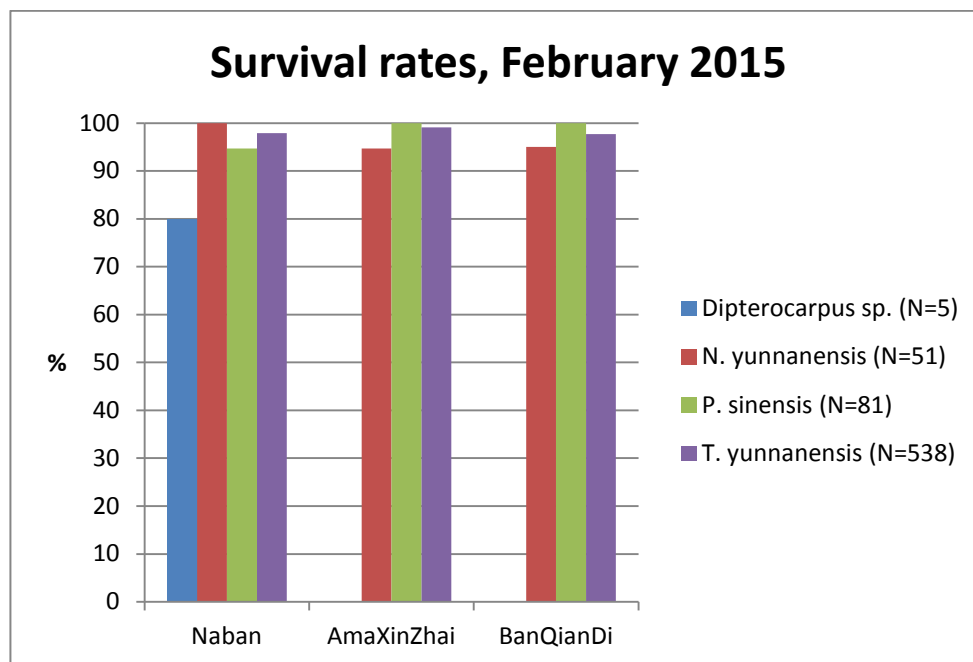


Fig. 1 - Survival rates 6 months after planting



Pic. 5 - Promising performance of *T. yunnanensis* at the Naban site: The picture has been taken in March 2015, that is towards the end of the dry season. It shows new sprouts, proving that the plant well adapted to its new habitat.